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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,665	03/24/2004	Lidu Huang	02EK-105598	6222

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EXAMINER
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GEISEL, KARA E

ART UNIT	PAPER NUMBER
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2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/808,665	Applicant(s) HUANG ET AL.	
	Examiner Kara E. Geisel	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 17-26 and 37-45 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-16 is/are allowed.
- 6) ☒ Claim(s) 27-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1004</u> . | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 17-26 and 37-45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on November 1<sup>st</sup>, 2006.

Applicant's election with traverse of Group I in the reply filed on November 1<sup>st</sup>, 2006 is acknowledged. The traversal is on the ground(s) that the groups can be searched without serious burden. This is not found persuasive because each of the independent claims do not require the particulars of the other independent claims, as evidenced by claims 1, 17, 27, 37 and 43. Furthermore each group is classified in separate subclasses, as described in the previous Office Action (paper number 20060804). For these reasons, each group would require a separate search, and therefore, would be a serious burden on the Examiner to search.

The requirement is still deemed proper and is therefore made FINAL.

### ***Information Disclosure Statement***

The information disclosure statement filed on October 1<sup>st</sup>, 2004 has been considered by the examiner. However, it is noted that C1 "Silica Integrated Optical Circuits" is over 100 pages long, so only a cursory search of this reference was conducted. If there are certain pages in this reference that are material to the prosecution of this application, applicant is requested to point them out.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

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The claims are directed a process which recites an abstract idea. Therefore the claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106)), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be a tangible result claimed. Merely estimating (claim 27, line 5) would not appear to be sufficient to constitute a tangible result, since the outcome of the estimating step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. As such, the subject matter of the claims is not patent eligible. Since claims 28-36 depend on this claim, and since they do not resolve the deficiencies of claim 27, they are also rejected under 35 U.S.C. 101.

#### *Claim Objections*

Claim 28 is objected to because of the following informalities: "wherein and the substance", it appears that applicant either forgot to add a word before the "and" or needs to delete "and" in order to clarify the claim.

Appropriate correction is required.

#### *Allowable Subject Matter*

Claims 1-16 are allowed over the prior art of record.

Claims 27-36 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus for measuring the refractive index of a substance comprising a beam profiler disposed to receive light passed from a first lens through a gap and a second lens, and to measure a **beam width** of the received light, and a controller that **estimates the refractive index of the substance from a**

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**measured beam width and a relationship between refractive index and beam width**, in combination with the rest of the limitations of claim 1.

As to claim 27, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for measuring the refractive index of a substance comprising measuring a **beam width** of light exiting a second lens, and **estimating the refractive index of the substance from a measured beam width and a relationship between refractive index and beam width**, in combination with the rest of the limitations of claim 27.

*Additional Prior Art*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Munk (USPN 3,950,104), Moore (USPN 4,213,699), Wyatt (USPN 4,952,055), Pawliszyn (USPN 4,993,832), Nebe et al. (USPN 5,347,358), Newell et al. (USPN 5,694,210), and Pike (US Pubs 2005/0024629).

Munk discloses a method and apparatus for measuring the refractive index of a substance comprising a first lens, a second lens disposed opposite to the first lens along an optical axis, a gap between the first and second lenses, the gap adapted to receive the substance, a beam profiler disposed to receive light passed from the first lens through the gap and the second lens, and to measure a beam intensity or the divergence of a set of beams of the received light, and a controller that estimates the refractive index of the substance from a measured beam intensity or divergence and a relationship between the refractive index and the beam intensity or divergence.

Moore discloses a method and apparatus for measuring the absorption or concentration of a substance comprising a gap adapted to receive the substance, a beam profiler disposed to receive light passed from the gap, and to measure a beam width of the received light, and a controller that estimates the absorption or concentration of the substance from a measured beam width and a relationship between the absorption or concentration and the beam width.

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Wyatt and Pike disclose a method and apparatus for measuring the refractive index of a substance comprising a first lens, a second lens disposed opposite to the first lens along an optical axis, a gap between the first and second lenses, the gap adapted to receive the substance, a beam profiler disposed to receive light passed from the first lens through the gap and the second lens, and to measure a beam displacement of the received light, and a controller that estimates the refractive index of the substance from a measured beam displacement and a relationship between the refractive index and the beam displacement.

Pawliszyn discloses a method and apparatus for measuring the refractive index of a substance comprising a first lens, a second lens disposed opposite to the first lens along an optical axis, a gap after the first and second lenses, the gap adapted to receive the substance, a beam profiler disposed to receive light passed from the first lens through the second lens and the gap, and to measure a distance between two beams of the received light, and a controller that estimates the refractive index of the substance from a measured distance between two beams and a relationship between the refractive index and the distance between two beams.

Nebe discloses a method and apparatus for measuring the refractive index of a substance comprising a first lens, a second lens disposed opposite to the first lens along an optical axis, a gap between the first and second lenses, the gap adapted to receive the substance, a beam profiler disposed to receive light passed from the first lens through the gap and the second lens, and to measure a distance between three slits of the received light, and a controller that estimates the refractive index of the substance from a measured distance between three slits and a relationship between the refractive index and the distance between three slits.

Newell discloses a method and apparatus for measuring the refractive index of a substance comprising a gap adapted to receive the substance, a beam profiler disposed to receive light reflected from the gap, and to measure a beam width of the received light, and a controller that estimates the

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refractive index of the substance from a measured beam width and a relationship between the refractive index and the beam width.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is **571 272 2416**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**Kara E. Geisel  
Art Unit 2877**

December 28, 2006